

# PTP IA-2 $\beta$ (U-21): sc-130858

## BACKGROUND

Protein-tyrosine phosphatase receptor-type N2 (PTPRN2) localizes in dense-core secretory vesicles of pancreas islet cells and influences Insulin secretion. The PTPRN2 37 kDa precursor is an autoantigen that contributes to Insulin-dependent diabetes mellitus (IDDM). The autoantigenic epitopes of PTPRN2 appear within the cytoplasmic domain of this transmembrane protein. PTPRN2 is present at high levels in brain and pancreas with lower levels in trachea, prostate, stomach and spinal cord. The human PTPRN2 gene maps to chromosome 7q36.3. Northern blot analysis showed that PTPRN2 was expressed as 5.5 and 3.7 kb transcripts primarily in human brain and pancreas. Three alternative transcript splice variants of this gene encode distinct proteins.

## REFERENCES

1. Kawasaki, E., et al. 1996. Molecular cloning and characterization of the human transmembrane protein tyrosine phosphatase homologue, phogrin, an autoantigen of type 1 diabetes. *Biochem. Biophys. Res. Commun.* 227: 440-447.
2. Smith, P.D., et al. 1996. ICAAR, a novel member of a new family of transmembrane, tyrosine phosphatase-like proteins. *Biochem. Biophys. Res. Commun.* 229: 402-411.
3. Kubosaki, A., et al. 2004. Targeted disruption of the IA-2 $\beta$  gene causes glucose intolerance and impairs Insulin secretion but does not prevent the development of diabetes in NOD mice. *Diabetes* 53: 1684-1691.
4. Drake, P.G., et al. 2003. A novel strategy for the development of selective active-site inhibitors of the protein tyrosine phosphatase-like proteins islet-cell antigen 512 (IA-2) and phogrin (IA-2 $\beta$ ). *Biochem. J.* 373: 393-401.
5. Achenbach, P., et al. 2002. Spontaneous peripheral T cell responses to the IA-2 $\beta$  (phogrin) autoantigen in young nonobese diabetic mice. *J. Autoimmun.* 19: 111-116.
6. Gross, S., et al. 2002. Multimerization of the protein-tyrosine phosphatase (PTP)-like Insulin-dependent diabetes mellitus autoantigens IA-2 and IA-2 $\beta$  with receptor PTPs (RPTPs). Inhibition of RPTP $\alpha$  enzymatic activity. *J. Biol. Chem.* 277: 48139-48145.

## CHROMOSOMAL LOCATION

Genetic locus: PTPRN2 (human) mapping to 7q36.3.

## SOURCE

PTP IA-2 $\beta$  (U-21) is a purified rabbit polyclonal antibody raised against a peptide mapping near the N-terminus of PTP IA-2 $\beta$  of human origin.

## PRODUCT

Each vial contains 100  $\mu$ g IgG in 1.0 ml PBS with < 0.1% sodium azide and 0.1% gelatin.

## STORAGE

Store at 4 $^{\circ}$  C, **\*\*DO NOT FREEZE\*\***. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## APPLICATIONS

PTP IA-2 $\beta$  (U-21) is recommended for detection of PTP IA-2 $\beta$  of human and rat origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for PTP IA-2 $\beta$  siRNA (h): sc-106910, PTP IA-2 $\beta$  shRNA Plasmid (h): sc-106910-SH and PTP IA-2 $\beta$  shRNA (h) Lentiviral Particles: sc-106910-V.

Molecular Weight of PTP IA-2 $\beta$  precursor: 135 kDa.

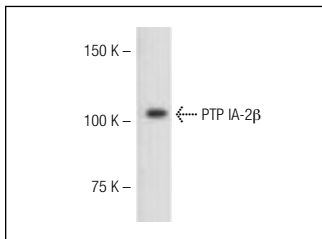
Molecular Weight of mature PTP IA-2 $\beta$ : 60/64 kDa.

Positive Controls: C6 whole cell lysate: sc-364373.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker<sup>TM</sup> compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker<sup>TM</sup> Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

## DATA



PTP IA-2 $\beta$  (U-21): sc-130858. Western blot analysis of PTP IA-2 $\beta$  expression in C6 whole cell lysate.

## RESEARCH USE

For research use only, not for use in diagnostic procedures.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.

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Try **PTP IA-2 $\beta$  (B-4): sc-393922**, our highly recommended monoclonal alternative to PTP IA-2 $\beta$  (U-21).